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(54) MUSIC CONTENTS TRANSFER SYSTEM

(57)Abstract:
PROBLEM TO BE SOLVED: To simplify the data transfer work in a music contents transfer system configured by connecting a digital memory player 1 provided with a detachable memory 5 and a personal computer(PC) 2 provided with an incorporated memory 13.
SOLUTION: In this music contents transfer systemwhen transferring data from the incorporated memory 13 to the detachable memory 5 of the digital memory player 1the PC 2 prepares a favorite list file including the capacity of the detachable memory 5 stores on the incorporated memory 13. Afterwardscorresponding to data restoring operationa plurality of pieces of music contained in the favorite list file having capacity matching with the detachable memory 5 of the digital memory player 1 are simultaneously transferred to the detachable memory 5 of the digital memory player 1 by the PC 2.

CLAIMS

[Claim(s)]
[Claim 1]Digital player apparatus which can reproduce digital data of two or more musical pieces which are comparatively provided with a desorbed type memory of small capacityand are stored in this desorbed type memory characterized by comprising the followingA music contents transfer system constituted by connecting digital filing apparatus of each other which it has a comparatively mass built-in memoryand can save digital data of two or more musical pieces in this built-in memory so that communication is possible.
A file creation means for digital filing apparatus to create a favorite list file containing capacity data of the desorbed type memory about two or more musical pieces stored in a desorbed type memory of digital player apparatusand to store in

a built-in memory.
According to batch transmission instructionsit is judged whether capacity data contained in a selected favorite list file is below capacity data of a desorbed type memory of digital player apparatusA batch transmission means to transmit those digital data to a desorbed type memory of digital player apparatus collectively about two or more musical pieces contained in a favorite list file judged to be the following.

[Claim 2]The music contents transfer system according to claim 1 which creates a favorite list file characterized by comprising the followingand is stored in a built-in memory.
A means to acquire capacity data showing capacity of a desorbed type memory from digital player apparatus.
According to an individual transfer commandfrom a built-in memory to a desorbed type memory of digital player apparatus. It is capacity data of the desorbed type memory about two or more musical pieces which were provided with an individual transfer means which transmits digital data of a specified musical piece individually for every musical pieceand transmitted a file creation means to a desorbed type memory of digital player apparatus individually.

[Claim 3]It is contained in a favorite list file by identification data of a desorbed type memory of digital player apparatusand a batch transmission meansIt is judged whether capacity data and identification data which are contained in a selected favorite list file are in agreement with capacity data of a desorbed type memory of digital player apparatusand identification dataThe music contents transfer system according to claim 2 which performs batch transmission about two or more musical pieces which restrict to the time when it is in agreementand are contained in this favorite list file.
[Claim 4]A music contents transfer system comprising:
Inside of two or more favorite list files by which a batch transmission means is stored in a built-in memoryA means to extract 1 or two or more favorite files in which capacity data below capacity data of a desorbed type memory of digital player apparatus is containedand to display a file name of this favorite file on a screen.
A means to select two or more musical pieces contained in a favorite file chosen according to operation which chooses one favorite file from 1 currently displayed on a screenor two or more favorite files as a transfer subject.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]

[Field of the Invention]Digital player apparatus [such as a digital memory player] by which this invention was comparatively provided with the desorbed type memory of small capacitysuch as a memory card and a memory stickDigital filing apparatussuch as a personal computer provided with comparatively mass built-in memoriessuch as a hard diskconnecting mutually with a USB cable -- the digital filing apparatus from digital player apparatus -- or it is related with the system which can transmit a music content from digital filing apparatus to digital player apparatus.

[0002]

[Description of the Prior Art]Connecting a personal computer with a digital memory playerand transmitting the digital data of two or more musical pieces to a digital memory player from a personal computer conventionallyis performed. In this casesince there is a limitation in the memory of a digital memory player at capacitythe user needs to advance selection of a musical pieceand transmissioncaring about the data volume of the musical piece used as a transmission plug until the memory of a digital memory player fills.

[0003]By the waysince the memory of a digital memory player is expensive and it is difficult for a user to own many memoriesAbout the memory which reproduced the musical piece stored repeatedly and in which the interest about those musical pieces fadedafter eliminating all the dataa using form [say / storing in this memory the digital data of two or more musical pieces which are newly pleasing] is common.

[0004]

[Problem(s) to be Solved by the Invention]Howeverthe digital data of two or more musical pieces stored in the memory in the past againThere is a case where he would like to transmit to a digital memory player from a personal computerto store in a memoryand to reproduce these musical piecesand in such a case a userSelection of a musical piece and transmission needed to be advanced caring about the data volume of the musical piece used as a transmission plug like the time of storing the digital data of the musical piece of these plurality in a memory beforeuntil the memory of the digital memory player filled. In particularwith a digital memory player and a personal computersince data systems may differ and the compression ratio of data may change with musicit is necessary to advance transmissionchecking one capacity at a time. Thereforethere was a problem that data transfer work was very complicated. Thenthe purpose of this invention is to provide the music contents transfer system which can simplify data transfer work.

[0005]

[Means for Solving the Problem]A music contents transfer system concerning this inventionDigital player apparatus which can reproduce digital data of two or more musical pieces which are comparatively provided with a desorbed type memory of small capacityand are stored in this desorbed type memoryDigital filing apparatus of each other which it has a comparatively mass built-in memoryand can save digital data of two or more musical pieces in this built-in memory is connected so that communication is possibleand it is constituted. A capacity data acquisition

means in which digital filing apparatus acquires capacity data showing capacity of a desorbed type memory from digital player apparatus hereAn individual transfer means which transmits individually digital data of a musical piece specified from a built-in memory to a desorbed type memory of digital player apparatus for every musical piece according to an individual transfer commandA file creation means to create a favorite list file containing capacity data of the desorbed type memoryand to store in a built-in memory about two or more musical pieces individually transmitted to a desorbed type memory of digital player apparatusAccording to batch transmission instructionsit is judged whether capacity data contained in a selected favorite list file is below capacity data of a desorbed type memory of digital player apparatusIt has a batch transmission means to transmit those digital data to a desorbed type memory of digital player apparatus collectively about two or more musical pieces contained in a favorite list file judged to be the following.

[0006]In a music contents transfer system of above-mentioned this inventionDigital data of two or more musical pieces is beforehand stored in a built-in memory of digital filing apparatusand digital data of a musical piece specified from digital filing apparatus to digital player apparatus is transmitted one by one according to a user's operation. Digital data of two or more musical pieces with a selected user is stored in a desorbed type memory of digital player apparatus by thisand it becomes full or full omitting a desorbed type memory. Capacity data showing capacity of a desorbed type memory of digital player apparatus is acquired by digital filing apparatus. Thenabout two or more musical pieces transmitted to a desorbed type memory of digital player apparatusdigital filing apparatus creates a favorite list file containing capacity data of the desorbed type memoryand a name of each musicand stores it in a built-in memory.

[0007]By repetition of the above proceduretwo or more favorite list files will be created by built-in memory of digital filing apparatus. Out of a favorite list file of these pluralitythe user can choose one favorite list file and can transmit those digital data to digital player apparatus collectively about two or more musical pieces contained in this favorite list file.

[0008]Howeverwhen the total data volume of two or more musical pieces contained in a selected favorite list file is larger than capacity of a desorbed type memory of digital player apparatus of the destinationThat iswhen capacity of a desorbed type memory which it is going to transmit from these is smaller than capacity of a desorbed type memory by which two or more musical pieces contained in a selected favorite list file were stored beforeno digital data of musical pieces can be transmitted to a desorbed type memory. Thendigital filing apparatus judges whether capacity data contained in a favorite list file of a selected file name is below capacity data of a desorbed type memory of digital player apparatus according to data transfer instructionsIt restricts to the time when it is the followingand those digital data is collectively transmitted to a desorbed type memory of digital player apparatus about two or more musical pieces contained in this favorite list file. As a resultall the musical pieces contained in a selected favorite list file will be stored in a desorbed type memory.

[0009]In concrete compositionto a favorite list file. It is contained by identification data of a desorbed type memory of digital player apparatusand a batch transmission meansIt is judged whether capacity data and identification data which are contained in a selected favorite list file are in agreement with capacity data of a desorbed type memory of digital player apparatusand identification dataIt restricts to the time when it is in agreementand batch transmission is performed about two or more musical pieces contained in this favorite list file.

[0010]According to this concrete compositiona data transfer is performed only within a case where a desorbed type memory by which two or more musical pieces contained in a selected favorite list file were stored beforeand a desorbed type memory which it is going to transmit from these are the same memories.

[0011]In concrete compositiona batch transmission meansInside of two or more favorite list files stored in a built-in memoryA means to extract 1 or two or more favorite files in which capacity data below capacity data of a desorbed type memory of digital player apparatus is containedand to display a file name of this favorite file on a screenIt has a means to select two or more musical pieces contained in a favorite file chosen according to operation which chooses one favorite file from 1 currently displayed on a screenor two or more favorite files as a transfer subject.

[0012]Since a file name of 1 or two or more favorite list files which can restore digital data is displayed on a screen on the occasion of data transfer according to this concrete compositiona userOnly by choosing one desired file out of a favorite file of these pluralitydigital data of all the musical pieces contained in the file can be transmitted to digital player apparatus from digital filing apparatus.

[0013]
[Effect of the Invention]according to the music contents transfer system concerning this inventiona favorite list file is chosen -- it excellingand[come out and] Since the digital data of all the musical pieces contained in this file can be transmitted to digital player apparatus from digital filing apparatusdata transfer work is very simple.

[0014]
[Embodiment of the Invention]Hereafterit explains concretely over a drawing about an embodiment of the invention. The personal computer (2) of each other is connected with a digital memory player (1) with a USB cable (3)and the music contents transfer system concerning this invention is constitutedas shown in drawing 1.

[0015]The desorbed type memory (5) in which the digital memory player (1) should store CPU (4) and the digital data of two or more musical piecesThe decoder (7) which restores to the LCD module (6) which should display various dataand the digital data read from the memory (5)It has a D/A converter (8) which changes into the audio signal of an analog the audio information obtained from a decoder (7)the amplifier (9) which amplifies the output of a D/A converter (8) and is supplied to headphoneand a USB interface controller (10).

[0016]The chip set (12) to which a personal computer (2) serves as CPU (11) from

two or more elements on the other handIt has the display (16) which displays the built-in memory (13) which consists of hard disk drive apparatusand various informationthe display driver (15) which drives a display (16)and the USB interface controller (14). As shown in <u>drawing 5</u>the digital data of two or more musical pieces is beforehand stored in the memory (13) of a personal computer (2) as a tune data file with a track name and data volume.

[0017]<u>Drawing 2</u> expresses the procedure for transmission (package preservation) of the musical piece from a personal computer to a digital memory playerand favorite list file creation. If the software of a personal computer is first started after connecting a digital memory player (PD) with a personal computer (PC) with a USB cable at Step S1In Step S2the capacity data of a memory is acquired from a digital memory playerand the identification data (ID) of a memory is acquired from a digital memory player in Step S3.

[0018]Nextin step S4the digital data of the specified musical piece is transmitted to a digital memory player from a personal computer. In transmissionconversion to the data format of a digital memory player of a personal computer from a data format is performed. Thenin Step S5about the musical piece transmitted to the digital memory player from the personal computerfile informationsuch as a track name (title)performance timeand data volume (size)is acquiredand the information is saved in a personal computer. Thenwhen it judges whether a musical piece is further transmitted to a digital memory player from a personal computer (a user's operation) and is judged as yes at Step S6it returns to step S4 and transmission of a musical piece and preservation of file information are repeated. As a resultas shownfor example in <u>drawing 5</u>the digital data of two or more musical pieces transmitted from the personal computer (2) will be stored in the memory (5) of a digital memory player (1) with the track name and data volume of each musical piece.

[0019]Transmission of all the desired musical pieces is completedand if a user inputs the file name (preservation destination list name) of the favorite list file which comprises a musical piece of these plurality and is judged to be no at Step S6 of <u>drawing 2</u>it will shift to Step S7. A preservation destination list name can be changed although beforehand set up as a default value. When a user pushes the memory package preservation button (refer to <u>drawing 4</u>) displayed on the screen by the software of the personal computer at Step S7it shifts to Step S8.

[0020]In Step S8when a preservation destination list name judges whether there is nothing on the list of personal computers and is judged to be yesafter inputting the list name of the preservation destination in step S9it shifts to Step S10. In Step S10the capacityIDthe aforementioned file information (a track nameperformance timedata volumeetc.)and the preservation destination list name of a memory of a digital memory player are saved at the favorite list file of a personal computerand procedure is ended.

[0021]As a resultin the memory (13) of a personal computer (2). As shown in <u>drawing 5</u>the file name (favorite name) of a favorite list filememory spacememory IDthe number of musicand the track name of each musical piece will be stored as

a favorite list file about two or more musical pieces transmitted to the memory (5) of the digital memory player (1).

[0022]Thenby changing the memory (5) of a digital memory player (1) to another memory (5')and performing same operationIt is stored in the memory (5') of a digital memory player (1) by the digital data of two or more musical piecesand in the memory (13) of a personal computer (2). About two or more musical pieces transmitted to the memory (5') of the digital memory player (1)the file name (favorite name) of a favorite list filememory spacememory IDthe number of musicand the track name of each musical piece will be stored as a favorite list file.

[0023]When a favorite list file is createdon the display (16) of a personal computer (2). As shown in drawing 4about two or more created favorite list files with the directory structure of each file. While a track name (title)performance timedata volume (size)and memory ID are displayeda track name (title)performance timeand data volume (size) are displayed about two or more musical pieces stored in the memory (5) of a digital memory player (1).

[0024]Drawing 3 loads a digital memory player (1) with the initialized memory (5)and expresses the procedure for transmitting the musical piece of a desired favorite list file to this memory (5) (package restoration). If the software of a personal computer is first started after connecting a digital memory player (PD) with a personal computer (PC) with a USB cable at Step S11In Step S12the capacity data of a memory is acquired from a digital memory playerand the identification data (ID) of a memory is acquired from a digital memory player in Step S13.

[0025]Nextwhen it judges whether there are some whose memory space and ID of a digital memory player correspond with the memory space of a favorite list (backup list) and ID which are created by the personal computer and judged as no at Step S14Since the favorite list file which should be restored to the memory of a digital memory player does not existit is processed as NG. On the other handwhen judged as yes at Step S14it shifts to Step S15 and the favorite list file name (backup list name) which is registered into the personal computer and which can be restored is displayed on a screen. If a user pushes the memory package restoration button which the user chose one backup list name at Step S16and also was displayed by the software of the personal computer at Step S17 according to thisIn Step S18the file information (a track nameperformance timedata volumeetc.) of the backup list name (favorite list file name) with the selected user which can be restored is acquired.

[0026]And in Step S19the information (music data and file information) about two or more musical pieces contained in a favorite list file from a personal computer to a digital memory player is transmittedand procedure is ended.

[0027]As a resultas shown in drawing 5the digital data of two or more musical pieces stored before will be restored to the memory (5) of a digital memory player (1).If similarly a digital memory player (1) is loaded with initialized another memory (5')another favorite list file name which can be restored to this memory (5') is chosen and a package restoration button is pushedthe digital data of two or more

original musical pieces will be restored to this memory (5').

[0028]Only by according to the music contents transfer system applied to this invention like ****choosing a desired favorite list file from the list currently displayed on the screen of the personal computerand pushing a package restoration buttonSince all the musical pieces contained in this favorite list file can be restored to the memory of a digital memory playercompared with the former which was transmitting data with careful attention to the memory residue for every musicdata transfer work becomes very simple.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a block diagram of a digital memory player and a personal computer which constitutes the music contents transfer system concerning this invention.
[Drawing 2]It is a flow chart which shows data storage procedure.
[Drawing 3]It is a flow chart which shows data restoration procedure.
[Drawing 4]It is a figure showing the example of a screen displayed at the time of data storage and restoration.
[Drawing 5]It is the explanatory view which contrasted the file structure of the memory of a digital memory playerand the memory of a personal computer.
[Description of Notations]
(1) Digital memory player
(2) Personal computer
(3) USB cable
(4) CPU
(5) Memory
(11) CPU
(13) Memory